

IN THE TITLE

Title of the Invention

Powered Moveable Stowage

IN THE DESCRIPTION

Field of the Invention

5 This invention relates to the stowage of equipment such as ladders on the top of vehicles, ~~and in particular, with a means by which these~~ the invention permits items ~~can~~ to be conveniently loaded and unloaded in a controlled manner by an operator standing on the ground.

Background of the Invention

10 Fire brigades commonly carry ladders and other equipment on top of their vehicles. Health and safety requirements now necessitate that these items are accessed from ground level and manual handling ~~limits~~ limitations restrict the amount of effort available from the operators. Existing systems designed to meet this requirement ~~utilise~~ utilize the operators to provide the motive force required to move the stowage and the
15 item upon it. Various ~~means~~ systems are also used to control the movements during the transition from ~~the~~ a horizontal stowed state to ~~the~~ a near vertical access position. Such systems have the disadvantage of requiring the operators to provide the motive power, ~~and thereby increasing~~ which increases the number of operators required as well as restricting the scope of permitted operation.

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Brief Summary of the Invention

~~_____ An object of this~~ The present invention ~~is to~~ provides a roof top stowage that is operable from ground level to move the stowed item. The roof top stowage ~~and~~ is powered throughout its movement ~~and that of the stowed item upon it whilst~~ while requiring minimal input from a single operator.

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According to ~~this~~ an aspect of the invention ~~there is provided~~ a moveable stowage ~~on for a~~ top of a vehicle ~~comprising~~ includes a longitudinal member, means for releasably securing the longitudinal member in ~~the a~~ stowed position, the longitudinal member being adapted to travel over a base member that is pivotally mounted on the vehicle so as to move the longitudinal member from ~~a the~~ substantially horizontal stowed position to

15 an angular access position, and upon ~~said~~ the longitudinal member a moveable attachment for connecting the stowed item to the longitudinal member such that the stowed item can be moved ~~on to~~ onto and off the longitudinal member, all movements being caused and controlled by powered means.

Brief Description of the Drawings

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~~A specific embodiment of this~~ The invention will now be described by way of example only ~~and~~ with reference to the accompanying drawings ~~of in~~ in which:-

Figure 1 is a right-side diagrammatic view showing ~~the stowage~~ one embodiment of the invention in the stowed position, ~~the stowage being viewed from a location displaced to the right of the stowage;~~ and

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Figure 2 is a view similar to figure 1 illustrating the ~~stowage in the~~ embodiment in an access position.

Detailed Description of the Drawings

Detailed reference will now be made to the drawings in which examples embodying the present invention are shown. The drawings and detailed description provide a full and detailed written description of the invention, and of the manner and process of making and using it, so as to enable one skilled in the pertinent art to make and use it, as well as the best mode of carrying out the invention. However, the examples set forth in the drawings and detailed description are provided by way of explanation of the invention and are not meant as limitations of the invention. The present invention thus includes any modifications and variations of the following examples as come within the scope of the appended claims and their equivalents.

The detailed description uses numerical and letter designations to refer to features in the drawings. Like or similar designations in the drawings and description have been used to refer to like or similar parts of the invention.

_____A vehicle such as a fire tender used by the fire brigades has on its top a moveable stowage 1 for a ladder. ~~A~~ The moveable stowage 1 comprising has a longitudinal member 10, and means (not shown) for releasably securing the longitudinal member 10 in the stowed position shown in fig 1. Mounted on the longitudinal member 10 is a closed loop transmission means 11 driven by a motive force 12 and tensioned and returned by a returning means 13. An attachment means 14 by which the stowed item 15 is attached to the stowage 1; forms part of the transition means 11 ~~where-by~~ by which the stowed item 15 may be propelled back and forth along the longitudinal member 10 using guide means (not shown).

_____ In one aspect, the closed loop transmission means 11, the motive force 12, and the

5 returning means 13 form a closed loop formed by a belt or chain running around a pair of sprockets (e.g. 12,13) at least one of which is power driven (e.g. 12). The longitudinal member 10 ~~being adapted to move~~ is moveable back and forth on a second guide means (not shown), to and from a stowed position (see fig. 1) on a base member 16 pivotally attached to a mounting 17 allowing it to pivot to an access position as shown in fig. 2.

10 The longitudinal member 10 ~~also comprising~~ further includes a linear second transmission means 18 that is powered by a second motive force 19 such that the longitudinal member 10 can be propelled in its movements on the base member 16. For example, means 18 can be a belt, chain or the like running around a power driven sprocket (e.g. 19).

15 _____ Attached to the base member 16 and also to a second mounting 20, a third motive force 21 exerts forces to the base member 16 off-set to the pivot causing it to pivot about the mounting 17 to and from the stowage position shown in fig 2. A control system (not shown) is also provided, which includes consisting of a number of sensors ~~(not shown)~~ that 22 that sequence and regulate movements of the stowage; i.e., the sensors 22 sense

20 ~~the ends of the movements and ensures their operation in the correct order and for the necessary duration.~~ _____

_____ By way of example operation, ~~The sequence of events being that the~~ a latch (not shown) retaining the longitudinal member 10 is released and the motive force 19 propels ~~by the linear transmission means 18~~ the longitudinal member 10 by the linear

25 transmission means 18 along the base member 16 away from the stowed position shown in fig 1 to a pre-set or intermediate access position. The third motive force 21 then exerts a force between the base member 16 and the second mounting 20 pivoting the base

5 member 16 about the mounting 17 until the access position shown in fig 2 is reached. The motive force 12 then exerts a force via the closed loop transmission means 11 around the returning means 13 causing the attachment means 14 together with the stowed item 15 to traverse the longitudinal member 10 to the access position shown in fig 2. _____

_____ Transition from the access position shown in fig 1 to 2 to the stowed position shown in fig 2 1 is achieved by the motive force 12 exerting a force causing the attachment means 14 together with the stowed item 15 to traverse the longitudinal member 10 to the stowage position on the longitudinal member 10 shown in fig 2. The third motive force 21 then exerts a force between the base member 16 and the second mounting 20 pivoting the base member 16 about the mounting 17 until the substantially horizontal stowage position of the base member 16 shown in fig 2 1 is reached. In one aspect of the invention, force 21 is a linear acting cylinder, activator, or the like. Such force 21 can be provided by hydraulic, electric pneumatic devices and the like. Then Finally, the motive force 19 propels the linear second transmission means 18 thereby moving the longitudinal member 10 along guide means (not shown) on the base member 16 away from the pre-set position shown in fig 2 to the stowed position shown in fig 1. As introduced, the stowage 1 is operable by a single operator from a remote position to load (stow) or unload (access) an item on a vehicle such as a firetruck.

_____ It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope and spirit of the invention. For example, specific shapes of various elements of the illustrated embodiments may be altered to suit particular applications. It is intended that the present

- 5 invention include such modifications and variations as come within the scope of the appended claims and their equivalents.